

DRAFT- FOR DISCUSSION PURPOSES ONLY**Listing of Claims**

1. (currently amended) A method of collecting placental stem cells from an isolated and exsanguinated mammalian placenta, said method comprising:

perfusing said placenta with a perfusion solution in an amount and for a time sufficient to collect a detectable amount of placental stem cells from said placenta, said placenta having been drained of cord blood prior to said perfusing, and wherein said perfusing occurs by passing said perfusion solution into one or both of the umbilical artery and umbilical vein of said placenta; and

collecting said placental stem cells and perfusion solution from said placenta.

2-24. (previously cancelled)

25. (currently amended) A method of collecting CD34⁺ stem cells from an isolated and exsanguinated mammalian placenta, said method comprising:

perfusing said placenta with a perfusion solution in an amount and for a time sufficient to collect a detectable amount of said CD34⁺ stem cells from said placenta, wherein said placenta has been drained of cord blood prior to said perfusing, and wherein said CD34⁺ stem cells are not obtained from cord blood, and wherein said perfusing occurs by passing said perfusion solution into one or both of the umbilical artery and umbilical vein of said placenta; and

collecting said CD34⁺ stem cells and perfusion solution from said placenta.

26. (currently amended) The method of claim[s] 1 [or 25] further comprising separating said placental CD34⁺ stem cells from [said residual cells] cells other than said CD34⁺ stem cells and said perfusion solution.

27. (previously added) The method of claim 26, wherein said separating is accomplished by centrifugation.

28. (cancelled)

29. (currently amended) The method of claim[s] 1 [or 25] wherein said perfusing is performed for at least four hours.

30. (currently amended) The method of claim[s] 1 [or 25] wherein said perfusing is performed for at least twelve hours.

31. (currently amended) The method of claim[s] 1 [or 25] wherein said perfusing is performed for at least 24 hours.

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32. (currently amended) The method of claim[s] 1 [or 25], wherein said perfusing is performed using a first volume of between about 30 ml and about 150 ml of said perfusion solution.

33. (previously added) The method of claim 32, further comprising continuing said perfusing using a second volume of about 30 ml to about 150 ml of said perfusion solution, said second volume being collected separately from said first volume.

34. (currently amended) The method of claim[s] 1 [or 25], in which said perfusing is performed for a plurality of times.

35. (previously added) The method of claim 34, wherein, for each of said times, said perfusing is performed using a volume of about 30 ml to about 150 ml of said perfusion solution.

36. (currently amended) The method of claim 32, further comprising separating said placental CD34⁺ stem cells from said perfusion solution.

37. (previously added) The method of claim 33, further comprising separating said placental CD34⁺ stem cells from said perfusion solution.

38. (previously added) The method of claim 32 wherein said placental CD34⁺ stem cells are collected over a period of up to 48 hours.

39. (previously added) The method of claim 33 wherein said placental CD34⁺ stem cells are collected over a period of up to 48 hours.

40. (currently amended) The method of claim[s] 1 [or 25] wherein said perfusion solution contains an anticoagulant.

41. (previously added) The method of claim 32 wherein said perfusion solution contains an anticoagulant.

42. (previously added) The method of claim 34 wherein said perfusion solution contains an anticoagulant.

43. (currently amended) The method of claim[s] 1 [or 25], wherein said perfusion solution comprises heparin, ethylene diamine tetra acetic acid (EDTA) or creatine phosphate dextrose (CPDA).

44. (currently amended) The method of claim[s] 1 [or 25], wherein said perfusion solution comprises a growth factor or a cytokine.

45. (previously added) The method of claim 44, wherein said growth factor or cytokine is selected from the group consisting of a colony stimulating factor, interferon, erythropoietin, stem cell factor, thrombopoietin, an interleukin, granulocyte colony-stimulating factor, and a combination of any thereof.

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46. (currently amended) The method of claim[s] 1 [or 25], wherein said isolated mammalian placenta is a post-partum placenta remaining after a successful birth.

47. (new) The method of claim 25 further comprising separating said placental CD34⁺ stem cells from cells other than placental CD34⁺ stem cells and said perfusion solution.

48. (new) The method of claim 47, wherein said separating is accomplished by centrifugation.

49. (new) The method of claim 25 wherein said perfusing is performed for at least four hours.

50. (new) The method of claim 25 wherein said perfusing is performed for at least twelve hours.

51. (new) The method of claim 25 wherein said perfusing is performed for at least 24 hours.

52. (new) The method of claim 25, wherein said perfusing is performed using a first volume of between about 30 ml and about 150 ml of said perfusion solution.

53. (new) The method of claim 52, further comprising continuing said perfusing using a second volume of about 30 ml to about 150 ml of said perfusion solution, said second volume being collected separately from said first volume.

54. (new) The method of claim 25, in which said perfusing is performed for a plurality of times.

55. (new) The method of claim 54, wherein, for each of said times, said perfusing is performed using a volume of about 30 ml to about 150 ml of said perfusion solution.

56. (new) The method of claim 52, further comprising separating said placental CD34⁺ stem cells from said perfusion solution.

57. (new) The method of claim 53, further comprising separating said placental CD34⁺ stem cells from said perfusion solution.

58. (new) The method of claim 52 wherein said placental CD34⁺ stem cells are collected over a period of up to 48 hours.

59. (new) The method of claim 53 wherein said placental CD34⁺ stem cells are collected over a period of up to 48 hours.

60. (new) The method of claim 25 wherein said perfusion solution contains an anticoagulant.

61. (new) The method of claim 52 wherein said perfusion solution contains an anticoagulant.

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62. (new) The method of claim 54 wherein said perfusion solution contains an anticoagulant.

63. (new) The method of claim 25, wherein said perfusion solution comprises heparin, ethylene diamine tetra acetic acid (EDTA) or creatine phosphate dextrose (CPDA).

64. (new) The method of claim 25, wherein said perfusion solution comprises a growth factor or a cytokine.

65. (new) The method of claim 64, wherein said growth factor or cytokine is selected from the group consisting of a colony stimulating factor, interferon, erythropoietin, stem cell factor, thrombopoietin, an interleukin, granulocyte colony-stimulating factor, and a combination of any thereof.

66. (new) The method of claim 25, wherein said isolated mammalian placenta is a post-partum placenta remaining after a successful birth.

67. (new) The method of claim 1 or claim 25, wherein said stem cell is totipotent.

68. (new) The method of claim 1 or claim 25, wherein said stem cell is multipotent.

69. (new) The method of claim 1 or claim 25, wherein said stem cell is embryonic-like.